EFFECTIVE LEARNING BEGINS WITH EFFECTIVE TEACHING: TEACHER COGNITION AND L2 PRONUNCIATION INSTRUCTION

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Abstract

This article not only serves as the introduction to the special issue "Second language pronunciation: Learning, pedagogy, and teacher education," but also as a space for the guest editors to reflect on the role of teacher cognition in second language pronunciation instruction. To this end, the authors conducted a comprehensive review of 14 articles on English teachers' cognition and pronunciation instruction published over the last decade. Selected articles were analyzed based on their findings, contributions, and limitations. The discussion highlights common themes and results and uses them to make recommendations for researchers, teachers, and teacher trainers.

Key words: teacher cognition, pronunciation instruction,

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1. Introduction

Pronunciation instruction continues to be overlooked in the second language (L2) classroom, despite accumulated evidence that targeting pronunciation helps learners improve their intelligibility in the L2 (Levis, 2018). This special issue of *Ilha do Desterro* "Second language pronunciation: Learning, pedagogy, and teacher education" brings together a collection of eight articles showcasing the diverse type of research currently conducted in this area. From quantitative to qualitative approaches, from teacher- to learner-centered, from holistic to phonetic measures of pronunciation, the articles brought together here arguably have one goal in common: to produce research findings that can be used (by teachers, teacher trainers, textbook publishers, and app developers) to assist learners improve their pronunciation in the L2.

As guest editors, we have decided to take a concrete stance and contribute to the "teacher education" component in the title of this issue. Our experience as language teachers, teacher trainers, and L2 pronunciation researchers has shown us that one reason why classroom learners do not receive pronunciation instruction is that teachers are often unwilling or unprepared to implement it. Previous research has confirmed these observations: faced with myriad factors such as lack of training, limited classroom time, and insufficient pedagogical materials, teachers routinely leave pronunciation instruction out of the classroom (Reed, 2022). In this introductory article, we explore this issue in depth by synthesizing relevant studies produced in the last decade. From a strictly theoretical standpoint, we examine how this research adds to the field of teacher cognition, that is, the set of beliefs, knowledge, and attitudes L2 teachers possess about their practice, learning, and their students (Borg, 2006). Practically, we hope this synthesis will shed light on how teachers can be better prepared to handle pronunciation instruction effectively. After all, even in an age of technology-mediated learning, most L2 learners still study the target language in instructed settings—virtual or in person—with a teacher as a guide. Therefore, helping teachers improve their practice will render learners' experience more successful. In other words, effective learning begins with effective teaching.

2. Teacher cognition and pronunciation teaching

Borg (2006) defines "cognition" as the complex mental processes involving what teachers think, know, and believe about their work. Research into L2 teacher cognitions includes studying classroom practices and understanding how these practices relate to teachers' cognitive processes (p. 54) and may examine both "pre-service"—those who are still in training through undergraduate or graduate programs and have little to no teaching experience—and "in-service" teachers—who already have some teaching experience. Notably, previous experiences in formal educational settings significantly impact initial conceptualizations of teaching. On this point, Borg (2006) explains:

The general picture to emerge here, then, is that prospective teachers' prior language learning experiences establish cognitions about learning and language learning which form the basis of their initial conceptualizations of L2 teaching during teacher education. It is perhaps surprising that more specific research into the prior cognitions of pre-service language teachers has not been conducted given the recognized influence such cognitions have on what and how teachers in training learn and on the practices which they adopt during their early teaching experiences in the classroom" (p. 62).

According to the author, teachers' beliefs and practical knowledge result from learning through observation that occurs unconsciously during their formal learning experiences before teacher training begins. Teachers' practical knowledge constitutes an interpretative framework through which they make sense of the classroom and their initial practices.

Understanding teachers' cognitions, therefore, becomes imperative as universities revise teacher training programs and develop professional development opportunities. However, the cognition of pre-service teachers and pronunciation teaching remains a largely unexplored area in Applied Linguistics in Brazil. In this context, exploratory research could reveal what beliefs, practical knowledge, and teaching practices and strategies are used by teachers, while more in-depth studies could examine how their teaching practices and cognitive development are interrelated, allowing teachers to (re)construct their knowledge and develop more reflective practices.

To gain a more nuanced understanding on the development of teachers' cognitions, we conducted a state-of-the-art review of the empirical research that addresses teachers' cognitions and pronunciation teaching. To be included in this review, articles needed to focus on the cognition of teachers of English as an additional or foreign language, be published in indexed, peer-reviewed journals, and have been published within the past ten years (2014-2024). We recognize that related research has also been conducted with L2s other than English (e.g., Huensch, 2019, for French and Spanish; Nagle, Sachs, & Zárate-Sández, 2018, for Spanish), but our focus will be L2 English due to the scope of the current journal and the vast amount of research published in this L2. The final selection of 14 articles provides an overview of current pronunciation research, particularly in relation to teacher training. We first provide a summary of each article, highlighting main findings, contributions, and limitations. Based on this analysis, the discussion brings together major common themes interwoven in the articles and suggests future directions for researchers, teachers, and teacher trainers.

3. Synthesis of relevant studies

Baker (2014) investigated pronunciation teaching practices of five experienced L2 English teachers in a U.S. teaching context. The researcher applied questionnaires, conducted semi-structured interviews, and stimulated recall interviews where teachers watched excerpts of their classes and discussed them

afterward. Baker (2014) found that teachers used around 25 different techniques, the majority of which were considered controlled pronunciation practices such as sound and word repetition, auditory and visual sound identification, and listening to audio-presented texts. As guided practice, some teachers fomented oral production among students (e.g., one student produced a sound and another student needed to identify it), and pronunciation practice with peer feedback. Only three teachers who had taken specific courses involving pronunciation used more communicative practices, such as games, role-play, presentations, and debates. Baker (2014) speculates that a larger repertoire of practices is due to the specialized pedagogical training these teachers had received. The author argues that pronunciation practice has been associated for a long time with imitative and prescriptive approaches, often emphasizing controlled techniques. This is an area that requires significant investment in teacher preparation programs, as communicative activities that involve peer interaction offer greater potential for language learning and the effective use of specific pronunciation features.

Burri (2015) investigated how a graduate course on phonology and L2 pronunciation teaching could influence the development of 15 pre-service teachers' cognitions. His study was conducted at an Australian university where the author implemented questionnaires before and after the course, focus groups with participants throughout the academic semester, semi-structured interviews, and classroom observations. The author highlights that, by working with various accents and varieties of English, participants became aware that the goal of teaching pronunciation is not to imitate native speakers and began to question the legitimacy of the native model. Participants also began to value language diversity as they became more aware of English non-native varieties. Burri (2015) highlights that some pre-service teachers in the study began to develop feelings of belonging and self-worth as their attitudes toward pronunciation teaching and learning shifted. Changes were particularly noteworthy among participants who did not have English as their native language. The author argues that raising pre-service teachers' linguistic awareness can help them develop more effective pronunciation practices for their classes.

Buss (2016) explored the beliefs and pronunciation teaching practices of 60 Brazilian English teachers using an online questionnaire. The study found that teachers frequently focused on teaching individual phonetic segments and highlighted sounds that could be challenging for Brazilian learners. Notably, teachers identified the interdental fricatives (ð and θ) as a problematic minimal pair, despite empirical research indicating that these sounds do not generally affect intelligibility. This suggests that teachers may base their pedagogical decisions on intuition rather than research (Levis, 2005). The study also revealed that most teachers extensively used techniques such as phonetic transcription and consulting dictionary transcriptions. In contrast, methods involving more communicative practice or tactile-kinesthetic approaches, such as body movement, articulation, songs, and games, were less frequently used. Additionally, teachers considered intelligibility and comprehensibility to be more

appropriate goals for pronunciation teaching than accent reduction. Consistent with this, teachers felt that the native speaker model was not the most suitable for teaching pronunciation. Buss (2016) also observed that the participants shared similar demographic profiles: many were from the same region in Brazil, had high professional qualifications, and worked in private teaching contexts or universities. This homogeneous scenario may not fully represent the broader range of teacher profiles or educational contexts across Brazil.

Foote *et al*. (2016) conducted a longitudinal study in which they observed the practice of three experienced English teachers in Canada. Classes were recorded throughout the school semester, and more than 40 hours of classroom observation were analyzed in the study. The authors highlight that only ten percent of all language-related episodes found in the recorded classes were concerned with pronunciation. Moreover, these episodes focused on segmentals, either through spontaneous correction of errors in students' oral production or with planned repetition activities such as tongue twisters. Corrective feedback was also used by teachers incidentally. Foote *et al*. (2016) argue that pronunciation teaching was rarely incorporated into the teachers' lesson plans and, therefore, students in this context did not receive sufficient instruction on challenging aspects of English pronunciation.

To explore teachers' cognition and classroom pronunciation instruction, Lim's (2016) study consisted of interviews and practicum-teaching observations with three pre-service Cambodian teachers. The researcher noted that teachers identified intelligible pronunciation as a teaching goal. However, they appeared to be uncertain about what "intelligible" speech meant, as they referred to correct pronunciation and the need to conform to American English when discussing their practice. Pronunciation instruction was mostly incidental, as teachers addressed pronunciation issues on the spot with recasts and repetition drills to provide students with pronunciation models. Lim (2016) also pointed out that teachers had positive attitudes toward non-native English varieties, but were unwilling to explore them in class due to concerns that students would react negatively.

Burri *et al*. (2017) investigated how the cognition of inexperienced and experienced teachers developed during a graduate course on phonology and English L2 pronunciation teaching at an Australian university. The data were generated in Burri (2015), but now analyzed under a different approach. The results highlight that while participants' awareness of using tactile and kinesthetic activities to teach pronunciation increased, few teachers actually implemented these strategies in their classrooms. Most teachers, regardless of their level of experience, continued to prefer controlled activities (such as reading and oral repetition practice) to teach pronunciation even after completing the graduate course. According to the authors, teachers struggled with integrating pronunciation activities into their classes, generally considering pronunciation as an extra activity for a few minutes at the beginning or end of a lesson. The authors also argue that the development of teachers' cognition requires more time than that available during an academic course and add that "[...] the process between input appropriation and action

requires considerable time" (p. 125). As a suggestion, the authors recommend that future studies investigate how teachers adopt pedagogical practices that are taught during training. They consider the possibility that teachers' cognition changed while they were taking the course, but may have reverted to its initial state due to contextual and institutional limitations.

Buss (2017) investigated pronunciation teaching with two groups of participants in Canada, where they pursued a Teaching English as a Second Language degree. In the experimental group, students participated in a course on English phonology and pronunciation teaching, while the control group studied general English teaching approaches at a different university. The data was generated with questionnaires on beliefs and pronunciation teaching, administered before and after the courses, and with semi-structured interviews. Buss (2017) highlights that the phonology course played an important role in the cognition of pre-service teachers, as they reported becoming more aware of English pronunciation and that their own pronunciation improved. Participants in the experimental group also had a brief opportunity to teach pronunciation, which appeared to have a positive effect on their training, as trying to teach pronunciation for the first time and noticing their students' progress was important for their development as teachers. The researcher reports that students who took the phonology course were more likely to believe in pronunciation teaching, and this did not change after taking the course. Finally, Buss (2017) notes that many pre-service teachers chose to use controlled activities for teaching pronunciation (reading, repetition, mechanical drills), which is not necessarily beneficial for developing learners' pronunciation as they lack communicative practice.

Couper (2017) interviewed 19 English teachers in New Zealand to investigate their cognitions and pronunciation practices. The study revealed that teachers had different levels of confidence when it came to teaching pronunciation. Some expressed a desire to learn more about the articulation of individual sounds, while others felt they needed more knowledge about stress and intonation. Teachers also recognized the need to understand the sound systems of other languages to better assist learners from diverse first language (L1) backgrounds. Couper (2017) highlights that teachers generally lacked pedagogical knowledge to teach pronunciation, as their practice was mainly reactive to difficulties encountered in class. Most participants had received little to no training in pronunciation pedagogy and tended to rely on phonemic symbols, transcription, and repetition drills in their practice.

Bai and Yuan (2019) explored 16 non-native English teachers' beliefs and practices about pronunciation teaching in Hong Kong. The authors conducted semi-structured interviews and asked participants to write reflections about their perceptions and practices of pronunciation teaching. Teachers recognized the importance of teaching pronunciation as they believed it facilitates students' effective communication, while increasing their self-confidence and motivation. Regarding resources for teaching pronunciation, some teachers reported that the International Phonetic Alphabet (IPA) could be a useful tool for mastering

accurate pronunciation and avoiding influence from local accents. However, other teachers also preferred interactive tasks, such as using songs and tongue twisters, because students usually find them more engaging. Bai and Yuan (2019) further explained that pronunciation was not central to these teachers' classroom practice because they were constrained by a rigid school curriculum that prioritized examination results, with greater emphasis placed on reading and writing. The authors also observed that these teachers often felt unsure about teaching pronunciation as a result of having insufficient training and believing that native English teachers would be better suited for this task.

Burri and Baker (2021) followed up with four teachers from Burri's (2015) study, six years after the initial investigation. Two classes from each teacher were observed and recorded for analysis, and semi-structured interviews were conducted. The study found that participants' classes now included activities beyond repetition practice, such as guided practice with dialogues, audio and video clips, dictations, diagrams with articulatory information, the use of the IPA, and role-play activities. Nevertheless, the authors noted that their practice was almost exclusively teacher-centered, with limited communicative context. Burri and Baker (2021) recall that, in the course they took years earlier, the teachers explored techniques that could be used for communicative pronunciation practice. These findings suggest that the influence of a course during the training period on teachers' cognition may be limited. Burri and Baker (2021) infer that the teachers' practice was affected by contextual factors related to their students' needs and the curricula they had to follow. Consequently, their classes shifted focus to other areas, such as grammar, reading, and writing, and their agency was limited as they could not change the contents or the curriculum. The authors argue that the longitudinal development of a teacher's cognition can be "[…] a complex, nonlinear, individual and context-driven process" (p. 13).

Villablanca (2022) surveyed 293 pre-service and in-service teachers from English language teaching programs in Chile with the aim of exploring teachers' knowledge, beliefs, and practices about pronunciation teaching. The author divided participants into different groups based on how long they had been in the program and conducted 33 semi-structured interviews. Results indicated that pronunciation importance varied across groups. While first-year participants placed a strong emphasis on pronunciation, more experienced peers argued that communication should be prioritized over perfect pronunciation. They believed that listening and conversational skills should be prioritized in language instruction. Interestingly, Villablanca (2022) noted that pronunciation instruction was constantly equated with the learning of phonetics and phonology, which was seen as non-essential for regular classrooms. Also, participants held the belief that correct pronunciation would entail native-like production of sounds. Despite recognizing intelligibility as the goal for pronunciation, some interviewees felt it might not be enough. They argued that teachers might be the only accessible language model for some learners, so they should strive for a pronunciation that is as close to native-like as possible. Unlike previous studies (Couper,

2017; Bai & Yuan, 2019), Villablanca (2022) found that the most experienced groups were confident in their teaching skills and pronunciation thanks to their training and working experience. They still struggled with suprasegmentals, but did not believe it affected their teaching or pronunciation. On the other hand, less experienced groups recognized the need to improve their pronunciation of vowels and prosody.

Tsunemoto *et al.* (2023) investigated 77 Japanese pre-service teachers' beliefs about the teaching of L2 English pronunciation and its relationship with L2 speech assessment (comprehensibility, accentedness, and fluency). Researchers applied an online questionnaire to examine teachers' beliefs and gather information about their L2 teaching and learning experience, along with a rating task, which consisted of Japanese students' extemporaneous speech. Results revealed that pre-service teachers with more experience were more skeptical about the easiness of L2 pronunciation learning and teaching while giving harsher ratings for L2 accentedness. The authors inferred more experienced pre-service teachers were more critical of L2 speakers' accent because they might have struggled with that themselves, suggesting that these teachers may have relied on personal language learning experience rather than professional preparation. Moreover, the authors discuss that in the absence of practical instruction on how to teach pronunciation, pre-service teachers have little incentive to modify their beliefs and face difficulty translating theoretical knowledge into pedagogical practice. The authors suggest that teachers be encouraged to hold positive views about the teachability of L2 pronunciation, which can be achieved by focusing on communicatively oriented dimensions of L2 speech and on teachers' pedagogical preparation to teach pronunciation.

Gordon and Barrantes-Elizondo (2024) examined the relationship between teachers' professional identity and pronunciation instruction with five experienced teachers in Costa Rica. The participants took part in individual semi-structured and focus-group interviews, and provided reflexive personal documents for the study. All teachers reported a lack of specific pronunciation instruction training in previous programs. The authors also noted these teachers idealized nativeness with reference to issues such as geographic proximity to the United States and previous experiences with American culture. However, teachers were aware that the effectiveness of their teaching practice was not related to their non-native background, but to knowledge of English phonetics/phonology as well as language teaching pedagogy, which gave them linguistic and professional legitimacy for teaching pronunciation and a strong sense of confidence.

Nguyen and Burri (2024) investigated 20 Vietnamese English teachers' pronunciation pedagogy training and their beliefs about effective pronunciation teacher preparation. The authors used a questionnaire, academic transcripts, and individual semi-structured interviews to collect the data. Findings revealed that teacher preparation programs did not include any pronunciation teaching training. Despite having insufficient training in pronunciation pedagogy, most teachers reported being confident to teach it. The authors speculated that

teachers believed speaking English would be enough to teach pronunciation, but suggested further research to determine the exact source of the teachers' confidence. Teachers also mentioned that preparation courses should equip them with both content and pedagogical knowledge to teach pronunciation. Interestingly, these participants wished to have English native-speaker teachers to teach them pronunciation in preparation courses as a way to be immersed in the pronunciation of the target language.

4. Discussion and conclusion

In general, these empirical studies shed light on challenges and difficulties encountered by teachers in their practice when it comes to pronunciation teaching. Pronunciation instruction is generally conducted under a structuralist, teacher-centered orientation, using oral drills and reading exercises without a focus on communicative context for meaning negotiation (Baker, 2014; Burri *et al.*, 2017; Buss, 2016, 2017; Lim, 2016). These practices seem to emphasize an isolated pedagogy of pronunciation teaching, which is still tied to a prescriptive view of pronunciation learning, despite ample and well-researched proposals to teach pronunciation from a communicative approach (e.g., Celce-Murcia *et al.*, 2010; Isaacs, 2009).

While oral drills and activities that focus on recognizing sounds can help students become aware of certain language features, it is paramount that instruction is systematically conducted, including activities that address both speech perception and production (Sakai & Moorman, 2018). In this vein, Saito and Lyster (2012) argue that students benefit from language practice in a communicative context with peer interaction, where they can use specific linguistic aspects that have been the focus of instruction by the teacher.

We also noted that integrating pronunciation into pedagogical planning is a challenging endeavor. According to some studies (Burri *et al.*, 2017; Couper, 2017; Foote *et al.*, 2016; Lim, 2016), pronunciation teaching seems to occur incidentally, often resulting from spontaneous teacher intervention when a student expresses doubt about their pronunciation. Moreover, some of the phonological aspects that teachers focused on seemed to be based on their own intuition, rather than being guided by empirical research (Buss, 2016). In some studies, teachers felt insecure (Couper, 2017; Bai & Yuan, 2019) and reported having insufficient preparation to teach pronunciation (Gordon & Barrantes-Elizondo, 2024; Nguyen & Burri, 2024). In this context, just one study explored the relationship between teachers' beliefs and pronunciation assessment. Tsunemoto *et al.* (2023) showed that, without proper training, pre-service teachers would rely more on personal experience than on professional experience to evaluate learners' accentedness, which emphasizes the need for focusing on pedagogical practice to teach pronunciation in teacher preparation courses.

A positive aspect emerging from this review was the impact of specific training on teacher cognition. Some studies (Baker, 2014; Burri & Baker, 2021;

Buss, 2017; Villablanca, 2022) reported that teachers with specialized coursework on phonetics and/or pronunciation teaching felt more confident with their pronunciation and pedagogical practice, while also adopting more sophisticated and communicative techniques for teaching pronunciation. Research findings highlighted teachers' desires and eagerness to teach pronunciation, which suggests that boosting teachers' general pedagogical knowledge can lead to a greater focus on pronunciation instruction (Burri, 2015; Nguyen & Burri, 2024).

A caveat from this synthesis revolves around the proposal to decentralize native varieties as the preferred model in pronunciation teaching. Some studies showed that intelligibility and comprehensibility were reported as desired practices teachers wanted to implement in the classroom (Buss, 2016; Gordon & Barrantes-Elizondo, 2024; Lim, 2016; Villablanca, 2022). However, such an observation must be considered carefully as few studies observed pronunciation teaching in practice (Burri & Baker, 2021; Foote *et al*., 2016; Lim, 2016). Nonetheless, the native speaker model still appears to influence teachers' beliefs and decision-making (Bai & Yuan, 2019; Gordon & Barrantes-Elizondo, 2024; Lim, 2016; Nguyen & Burri, 2024; Villablanca, 2022).

Finally, we must highlight that research findings were gathered from a diverse array of contexts, including eleven countries (Australia, Brazil, Cambodia, Canada, Chile, China, Costa Rica, Japan, New Zealand, the U.S., and Vietnam). This picture highlights the widespread interest in the relationship between teacher cognition and pronunciation instruction, attesting to its significance and relevance across different cultural settings.

Based on the articles synthesized above, we propose specific recommendations for researchers, teachers, and teacher trainers.

For researchers:

1. **Investigate long-term effects of training.** Examine how teacher cognition and pronunciation teaching practices evolve over time and in different contexts (Burri and Baker, 2021). These studies should track changes in teachers' methods and attitudes over several years to understand better how initial training influences long-term practice. This approach may reveal how teachers' pedagogical practice evolves as their cognition changes. Similarly, studies by Baker (2014) and Burri (2015) suggest that while specific courses on phonology and pronunciation teaching can impact a teacher's practice, these changes may not always be sustained over time or translate into more sophisticated teaching practices.

2. **Explore diverse contexts and profiles.** Expand research to include diverse teaching contexts, regions, and teacher profiles to ensure findings are representative and applicable to a wider audience (Buss, 2016; Villablanca, 2022). Researchers should aim to study teachers from various cultural, linguistic, and institutional backgrounds to capture a broader spectrum of experiences and needs. In particular, further research is needed in

educational contexts other than higher education. There is a dire need to understand how L2 pronunciation learning in instructed settings works for children, for example, for whom explicit instruction and attention to form might not be viable teaching strategies.

3. **Examine barriers to implementing communicative techniques.** Focus on the challenges teachers face in integrating communicative pronunciation practices and identify ways to overcome these barriers (Foote et al., 2016; Bai and Yuan, 2019). Specifically, we need to explore how institutional constraints, lack of resources, and the need to follow a rigid curriculum prevent eager teachers with good ideas from implementing effective pronunciation instruction.

4. **Analyze the role of teacher identity in a wider context.** Further investigate how teachers' professional identity and perceptions of legitimacy (for example, as non-native English speakers) affect their approach to pronunciation teaching (Gordon and Barrantes-Elizondo, 2024). This research should incorporate issues such as comprehensibility and intelligibility (Munro & Derwing 2015), the relationship between accent and professional development (Teló *et al.*, 2022), and the influence of native-speaker ideology on teachers' cognitions (Llurda & Calvet-Terré, 2022)

For Teachers:

1. **Focus on intelligibility:** Prioritize intelligibility and comprehensibility over achieving native-like pronunciation, aligning teaching goals with realistic and effective outcomes for students (Buss, 2016; Villablanca, 2022). Emphasizing clear communication will help students build confidence and better use English in real-world contexts.

2. **Leverage linguistic diversity.** Embrace and promote non-native varieties of English to foster inclusivity and build students' confidence in using English in diverse contexts (Burri, 2015; Lim, 2016). This approach encourages students to view their own accents and identities as valid, reducing anxiety and improving their engagement with language learning.

3. **Diversify pronunciation activities.** Incorporate a range of activities, from controlled drills to more communicative tasks like role-play, games, and peer feedback, to address different learning needs (Baker, 2014; Burri *et al.*, 2017). By varying techniques, teachers can cater to diverse learning styles, keeping students engaged and enhancing their pronunciation skills.

4. **Use reflective practice.** Engage in reflective practice by recording lessons, obtaining feedback, and self-assessing to continually improve pronunciation teaching strategies (Burri & Baker, 2021). Regular reflection helps teachers

identify areas for improvement and adjust their teaching methods to better meet student needs.

For teacher trainers:

1. **Provide practical training opportunities.** Include hands-on training and classroom simulations that allow teachers to practice pronunciation pedagogy and apply theoretical knowledge in real-life scenarios (Burri, 2015; Buss, 2017). Such experiential learning helps teachers feel more prepared and confident in implementing pronunciation activities. In this sense, it is worth remembering that teaching pre-service teachers the fundamentals of English phonetics/phonology is not the same as preparing them to teach English pronunciation (Zárate-Sández, 2020). That is, understanding the formal aspects of the language does not mean we have the necessary pedagogical skills to help students learn and use that form.

2. **Encourage use of a variety of techniques.** Train teachers to use a balanced mix of controlled, guided, and communicative pronunciation activities to cater to different learning styles and objectives (Baker, 2014; Couper, 2017). Exposure to a wide range of techniques helps teachers adapt to various classroom contexts and student needs. Professionals in charge of teacher training and professional development should revitalize practices that stimulate curiosity and the expansion of teachers' analytical awareness so that teaching becomes more reflective and locally informed, and mirrors students' actual needs and difficulties.

3. **Enhance confidence and pedagogical skills.** Develop professional development opportunities that boost teachers' confidence in teaching pronunciation, particularly those who feel underprepared or lack specialized training (Nguyen & Burri, 2024). In addition to the traditional professional conferences and symposia, professionals can share knowledge and best practices through recorded lectures, webpages with materials and teaching tips, and blogs that foster the exchange of ideas and experiences. Confidence-building measures, such as peer support groups and mentorship, can also empower teachers to experiment with new ways to diversify pronunciation instruction.

4. **Integrate Pronunciation into Broader Curriculum:** Train teachers to incorporate pronunciation as a regular component of language lessons rather than an isolated skill, encouraging its use throughout all language activities (Foote et al., 2016; Burri & Baker, 2021). This holistic approach helps students develop pronunciation skills alongside other language competencies.

5. The current issue

The current issue brings together eight articles showing cutting-edge research on the teaching and learning of English pronunciation being conducted in Brazil, North America and Europe. Here we present a brief description of each.

In "Between pedagogical content knowledge and confidence: A case study of pronunciation training and teacher preparation", Barrantes-Elizondo and Gordon investigated how training impacts the development of content knowledge (CK) and pedagogical content knowledge (PCK) for teaching pronunciation. They also explored how this knowledge helps boost the confidence of pre-service teachers in meeting their future students' pronunciation needs. Participants were five pre-service teaching-English-to-speakers-of-other-languages (TESOL) students, who were enrolled in a pedagogical pronunciation course as part of their teacher training program. The authors used four different data collection methods to generate the data: reflective journals, semi-structured individual interviews, stimulated-recall individual interviews, and a focus group interview. Results demonstrated that the participants perceived CK as an essential subject matter asset to develop PCK based on theoretically supported teaching techniques, while also expressing a lack of confidence in their knowledge of specific segments (e.g., vowels), intonation, and certain types of connected speech such as linking.

Bettoni's article "The interplay among attention, self-esteem, beliefs, and L2 pronunciation" explored whether sustained attention, self-esteem, and beliefs about pronunciation and teaching are linked to L2 pronunciation performance in a reading task. Thirty-nine Brazilian high school students, aged 18 and late learners of English, completed a beliefs questionnaire, Rosenberg's self-esteem scale, and read a 69-word paragraph. A subset of students also took the d2-R test, a validated assessment of sustained attention. Statistical analyses were conducted to identify correlations and variable effects. Findings showed that a greater liking for English was associated with fewer mispronunciations. Additionally, different processes measured by the d2-R test correlated differently with various mispronunciation categories.

McCrocklin based her article "Understanding accent and identity on the border: Exploring bilinguals' perceptions of intelligibility, accentedness, and language-learning goals" on the observation that many L2 learners still express a desire for a native-like accent, even though the field has shifted toward models emphasizing intelligibility. In this context, the study examined the views of bilinguals who have experienced managing their accent and identity in two languages (English and Spanish), focusing on how the connection between accent and identity affects language-learning goals. Results reveal that 97% of participants acknowledged a link between accent and identity, yet 72% still preferred a native accent when learning a new language. Intelligibility appeared to be a crucial factor, with those favoring a native accent associating it with higher intelligibility, while others prioritized intelligibility independently of accent.

The article "Examining vowel intelligibility in Brazilian EFL learners: A study using automatic speech recognition" by Kivistö-de-Souza and Santos explored how automatic speech recognition (ASR) may help learners in the acquisition of English sounds. The authors measured how Microsoft Word Dictate judged the intelligibility of Brazilian Portuguese speakers of English. The stimuli consisted of English vowels embedded in isolated words. Results showed that overall intelligibility was low (50%). Vowels /u/, /e/, and /æ/ were often unintelligible to the ASR software, whereas the high front vowel /i/ and the low back vowel /ɑ/ were the most intelligible. The authors suggest that future studies employ a method of embedding target words into carrier sentences to provide the ASR software with a context.

Uzun's "Extracurricular pronunciation training examined: A qualitative investigation" studied the development and implementation of an extracurricular pronunciation training program for EFL learners and assesses its effectiveness based on feedback from students and trainers. The course design, teaching methods, resources, and syllabus were evaluated using reflections from 25 students, focusing on content, tasks, and their evolving pronunciation goals after completing the training. The researcher trainer (RT) and observer trainer's (OT) post-program reflections underwent thematic analysis. Results indicate cognitive and emotional benefits for students, emphasizing the course's content, tasks, and the trainers' role. Both trainers viewed the program as successful but suggested improving the duration of the training and the assignment submission process.

In "The effect of perception training with synthetic and natural stimuli on the identification of English vowels by Brazilians", Oliveira da Rosa and Silveira examined the effectiveness of synthetic versus natural stimuli in training Brazilians to perceive the English vowels /æ/ and /ɛ/. Fifty-six participants were randomly assigned to three groups: natural stimuli, synthetic stimuli, and a control group. The experimental groups received perception training; the natural group listened to recordings of vowels with unaltered duration, while the synthetic group listened to recordings of vowels adjusted to a 350ms duration. Both pre- and post-training perception tests were conducted to assess improvement. The results showed that perception training using both synthetic and natural stimuli effectively enhanced the ability to identify the target vowels.

Alves and Vieira examined how an Argentinian learner's Voice Onset Time (VOT) for the English plosives /p/, /t/, and /k/ developed over time. In the article, "Desenvolvimento do padrão de voice onset time positivo do inglês (L2) por um aprendiz hispanofalante em contexto de treinamento perceptual: Uma análise de *change-point* à luz da teoria dos sistemas dinâmicos complexos", the authors used a longitudinal approach, collecting data 24 times over the course of a year. Between data collections 09 and 15, the learner participated in perceptual training using the online platform English Accent Coach. To track changes, a change-point analysis was conducted, which revealed shifts in VOT patterns for all three consonants and an increase in VOT values. The findings also showed variability

in the learner's production, which suggested that the learner was experimenting with new speech patterns.

In "Efeitos multidirecionais da instrução explícita de pronúncia: o desenvolvimento de VOT longo em inglês (L2) e sua influência nas oclusivas do português brasileiro (L1)", Kupske and Perozzo investigated the effects of explicit instruction on Voice Onset Time (VOT) production in both L2 English and L1 Brazilian Portuguese. Participants were 16 Brazilian learners of English, who were split into two groups, experimental and control. The experimental group took part in a 120-minute session of explicit instruction, based on the communicative framework for pronunciation teaching from Celce-Murcia *et al.* (2010). The authors report that the control group did not meet the expected L2 VOT pattern throughout the study and showed no changes in the L1 production. However, after receiving instruction, the experimental group showed an increase in VOT values for both the L2 and the L1, which attest to the multidirectional effects of explicit pronunciation teaching. Under a dynamic approach to bilingual development, the study discusses how the mechanisms for language development operate similarly in both the L1 and the L2 and remain active throughout life.

We close the issue with an interview we conducted with John Levis. This influential scholar talks about his career, the challenges of teaching pronunciation under competing approaches, and his vision for the field. Highlighting a key quote from the interview, we called the entry '"I think we don't have a really good way to talk about intelligibility": An interview with John Levis'.

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